

Work Order ID 77981

\*77981\*

Page 1

December-23-11 10:36:05 AM

Item ID: D206-642-151

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Replacement Skidtube

Start Date: 22/12/2011 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: M.L.J

Date: 11/12/23

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3804

A

IIN-D206-642

O

100

0.00

\*100\*

DOCUMENT CONTROL

DC:

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-151

CHG001

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Work Order ID 77981**

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

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Item Name: Replacement Skidtube

Start Date: 22/12/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110

0.00

**\*110\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Deburr Fwd edge of tube

2- Remove ridge on inside of Fwd edge of tube as per Dwg D3804

3-Weld Fwd Cap as per Dwg D3804. Use aluminum rod. Grind D2647 to fit as required.

Pick:

Qty Part Number Description Batch

A/R Aluminum Rod

4-Grind weld flush to cap on top surface only.

5-Cut Aft end as per dwg D3804 from front of tube and Deburr

6-Remove inner indexing ridge on Aft end of skidtube as per Dwg D3804

7-Open holes for Aft end cap as per Dwg D3804 with #30 Drill Bit using DT8025.

8-Drill pilot holes using Dt8166 &amp; DT8169D &amp; DT9771.

9-Locate DT8732 from inner Aft saddle hole &amp; 3rd crossbolt hole. Insert D3286-1 doubler using DT8732 &amp; D206-642-241-T1, then locating doubler off of 3/16" holes, cleco DT8732 &amp; doubler leaving DT8732 for added support.

10- Drill D3286-1 doubler rivet holes in tube using # 30 drill, spot drilling doubler at the same time.

{ S.A.D 12-01-11

{ BE 12-01-11

12/01/11

{ S.A.D 12-01-11

{ S.A.D 12-01-11

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Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

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Stop **\*NR2\***

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11-Working from the center out, drill # 30 holes into D3286-1 doubler. Cleco each hole as it is being drilled. Verify angle of holes to accommodate rivet heads.

12-Remove 3/16" cleco's only and open GHW holes to Ø0.500" as per Dwg D3804

13-Remove D3286-1 doublers, identify orientation, deburr, then attach them to the workorder

14-Remove indexing edge using DT8741 as per Dwg D3804

15-C'sink GHW rivet holes as per Dwg D3804

16- Open Aft cap hole #6.  
\*\*\*\*no wearplate holes for this skidtube\*\*\*\*

17-Deburr tube and blow out chips from inside the tube

120

QC6- Inspect dimensions to drawing

0.00

**\*120\***

QC

Memo

0.00

Quality Control

SAD 12-01-11

DL 12/01/11

S 12/01/12

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

**\*140\***

HandFinish

Memo

0.00

Hand Finishing

OK 12/01/12

150

QC3- Inspect Part Finish

0.00

**\*150\***

QC

Memo

0.00

Quality Control

① SAD 12-01-12

160

Skidtubes

0.00

**\*160\***

Skidtubes

Memo

0.00

Skidtubes

1-Open holes to finished size as per Dwg D3804, (without cutting fluid)

2-C'sink crossbolt spacer holes as per Dwg D3804(without cutting fluid)

3-Deburr and blow out all chips from inside the tube

OK 12/01/12

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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**\*1\***

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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170 QC6- Inspect dimensions to drawing

0.00

**\*170\***

QC

Memo

0.00

Quality Control

*DP* 12-1-12

180

0.00

**\*180\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Locate, install and rivet doublers as per Dwg D3804. Micro-shave rivets as required

2-Bond D2654-1 web in place as per QSI 015. Ensure holes line up. Allow 12

Hrs. cure time before cutting

Start Date: 12/01/12 Time: 3:26

Finish Date: 12/01/12 Time: 7:00

Pick:

Qty Part Number Description Batch

A/RSikaflex-291 119508

Sikaflex expire date: 2/08/13

1 0 SAG 12-01-12

OK 12/01/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*NS1\***

Revision ID:

Stop

**\*NS2\***

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Start Date: 22/12/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00

**\*190\***

QC

Memo

0.00

Quality Control

1 0 BEB-01-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D206-642-151

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 22/12/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

**\*200\***

Skidtubes

0.00

Skidtubes

Memo

Skidtubes

1-remove alodine from around hole and prepare for welding

2-Prep per QSI 005 and Insert D2649 crossbolt spacers. Weld as per QSI 004 and Dwg D3804. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.

Pick:

QtyPart NumberDescriptionBatch

A/RAluminum Rod M119785

3-Grind welds flush as per Dwg D3804.

4-Using DT8733, insert (2) D3286-3 spacers as per QSI 004 and Dwg D3804. Remember to back drill each hole to Ø0.402" before welding other side. Use SS rod as required.

A/RSS Rod NONE

5-Counterbore 5/16" x 0.750" deep except 7th hole from Aft end as per Dwg D3804. Deburr

3 BE 12-01-16

B 12/01/16

D 12-1-25

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item Name: Replacement Skidtube

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**\*1\***

Cust Item ID:

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**\*1\***

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	HandFinishing	0.00							
<b>*210*</b>									
HandFinish	Memo	0.00							
Hand Finishing	Install D2680-041 Nut Plate as per Dwg D3804								
215	QC9- Inspect visual per QSI004- Fusion Welds	0.00							
<b>*215*</b>									
QC	Memo	0.00							
Quality Control									
220	QC10- Inspect visual per QSI004- ground welds	0.00							
<b>*220*</b>									
QC	Memo	0.00							
Quality Control									

① 3 12/01/16

12.01.26

8 12/1/15

# Dart Aerospace Ltd

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC5- Inspect part completeness to step on W/O	0.00							
<b>*230*</b>									
QC	Memo	0.00							
Quality Control									
240	Pressure Wash per QSI005 4.3	0.00							
<b>*240*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
250	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
<b>*250*</b>									
Powdercoat	Memo	0.00							
Powder Coating									

① *m/c* 12-1-25

*1X m/c* 12/01/26

Memo  
START TIME: 2:20  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 2:50

*M119480*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Date:

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Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC3- Inspect Part Finish

0.00

**\*260\***

QC

Memo

0.00

Quality Control

16H 0 12/01/31

270

HandFinishing

0.00

**\*270\***

HandFinish

Memo

0.00

Hand Finishing

1-Install D2651-3 O-Rings on D2651-1 plugs with Petroleum Jelly and install plugs as per Dwg D3804. Clean excess adhesive.

16H 0 12/01/31

W/O:		WORK ORDER CHANGES					
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Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	HandFinishing	0.00							
<b>*280*</b>									
HandFinish	Memo	0.00							
Hand Finishing	1-Install D2646 Aft Cap and seal with Sikaflex. Clean excess adhesive ✓ A/RSikaflex-291 <u>11/11/9508</u> Sikaflex expire date: <u>12/08</u> 2- Install wearplate as per dwg 2-Wing Walk as per Dwg D3804 and QSI 005 4.4 ✓ Batch: <u>11/12/0125</u>								
290	QC3- Inspect Part Finish	0.00							
<b>*290*</b>									
QC	Memo	0.00							
Quality Control									

16H \$ BR 12-2-15.

81762116

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 77981

**\*77981\***

Page 12

December-23-11 10:36:05 AM

Item ID: D206-642-151

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 22/12/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 01/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

300 QC5- Inspect part completeness to step on W/O

0.00

**\*300\***

QC

Memo

0.00

Quality Control

310

0.00

**\*310\***

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-642-151

Location:

PPP Rev:

*PP 76696*

320

0.00

**\*320\***

QC21- Final Inspection - Work Order Release

QC

Memo

0.00

Quality Control

*12/2/11 7:11*

*12/2/21*

*mf 12-02-21*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

December-23-11 10:36:10 AM

Page 1

Work Order ID: 77981

**\*77981\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP REV:A 10.12.08 PER IIN REV:N DD VERF:EC

IPP

REV:B 11.09.16 PER IIN REV:O DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2620

Manufactured

No

110

Each

13.0000

1

1

**\*D2620\***

Skidtube, 206 Skidtube

\*\*

SAD R-01-11

Location

Loc Qty

Loc Code

LG

13

71616

3

71617

6

75470

2

75587

2

376 8/5

D2647

Manufactured

No

110

Each

183.0000

1

**\*D2647\***

Cap

\*\*

JE 12-01-11

Location

Loc Qty

Loc Code

LG002

183

73826

74

75482

109

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 2

Work Order ID: 77981

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

\*77981\*

\*D206-642-151\*

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-04

Purchased

No

180

Each

12,557.00

52

52

\*CR3212-4-04\*

Cherry Rivet

\*\*

SAD 12-01-12

## Location

## Loc Qty

## Loc Code

ST331

2567

116471

78

117816

3

118686

1

118840

16

119017

2459

119075

10

st510

9990

119075

9990

D2654-1

Manufactured

No

\*D2654-1\*

Web

D3286-1

Manufactured

No

\*D3286-1\*

Doubler

180

Each

0.0000

1

1

\*\*

DL 12/01/12

180

Each

178.0000

2

2

\*\*

SAD 12-01-11

## Location

## Loc Qty

## Loc Code

LG002

178

74872

6

75484

54

B76772

2

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 3

Work Order ID: 77981

**\*77981\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

200

Each

634.0000

19

19

**\*D2649\***

Cross Bolt Spacer

\*\*

BE 12-01-16  
B77574 x19

Location

Loc Qty

Loc Code

LG001

634

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

76793

515

D3286-3

Manufactured No

200

Each

118.0000

2

2

**\*D3286-3\***

Spacer

\*\*

BE 12-01-16  
B76773 x2

Location

Loc Qty

Loc Code

LG001

101

74117

1

76773

100

LG002

17

75483

17

D2680-041

Manufactured No

210

Each

64.0000

1

1

**\*D2680-041\***

Nut Plate

\*\*

12/01/16

Location

Loc Qty

Loc Code

ST020

64

75479

64

December-23-11 10:36:10 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 4

Work Order ID: 77981

\*77981\*

Parent Item: D206-642-151

\*D206-642-151\*

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

210

Each

1,762.000

2

2

\*CR3212-4-03\*

Cherry Rivet

\*\*

(2) 12/01/16

Location

Loc Qty

Loc Code

FP002

768

114859

768

ST331

994

110139

2

119017

992

AN960JD416

NAS1149D0463J

Purchased

No

210

Each

0.0000

1

1

\*AN960JD416\*

Washer

\*\*

1118384 (x1) 12/01/16

CCR264SS3-3

Purchased

No

210

Each

993.0000

2

2

\*CCR264SS3-3\*

Cherry Rivet

\*\*

(2) 12/01/16

Location

Loc Qty

Loc Code

ST331

993

113973

2

117849

147

119017

844

MS27039-4-06

Purchased

No

210

Each

323.0000

1

1

\*MS27039-4-06\*

Screw

\*\*

12/01/16

Location

Loc Qty

Loc Code

ST292

323

119075

323

YI

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

December-23-11 10:36:10 AM

Page 5

Work Order ID: 77981

**\*77981\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2651-1 Manufactured No

270 Each 357.0000 6 6

**\*D2651-1\***

Plug

\*\*

B78124 (x6) 12/01/31

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	357	
57869	1	
66445	10	
69018	2	
70839	2	
71037	31	
73827	311	

D2651-3 Manufactured No

270 Each 847.0000 6 6

**\*D2651-3\***

O-Ring

\*\*

12/01/31

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	847	
61962	12	
73828	835	

D3873-1 Manufactured No

280 Each 611.0000 14 14

**\*D3873-1\***

Bushing

\*\*

B78017 (x14) 12/01/31

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST088	611	
64760	1	
68247	4	
73829	19	
73830	2	
76792	585	

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 6

Work Order ID: 77981

\*77981\*

Parent Item: D206-642-151

\*D206-642-151\*

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

280 Each

153.0000 1 1

\*D2646\*

Aft Cap

\*\*

12/6/13

## Location

## Loc Qty

## Loc Code

FP002

153

62678

5

68280

5

70945

1

71038

4

71070

2

73294

1

73825

135

D3805-041

Manufactured No

280 Each

1.0000 1 1

\*D3805-041\*

Wearplate Assembly Fwd, Low Gear

\*\*

1 BK 12-2-15

## Location

## Loc Qty

## Loc Code

FP001

1

75149

1

MS27039-1-08

Purchased No

280 Each

1,243.000 2 2

\*MS27039-1-08\*

Screw

\*\*

12/6/13

## Location

## Loc Qty

## Loc Code

ST291

1243

117423

77

118910

226

119075

440

119109

500

X 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 7

Work Order ID: 77981

**\*77981\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

MS21042L3

Purchased

No

280

Each

6,837.000

7

7

**\*MS21042L3\***

Nut

\*\*

*Handwritten: 12/01/31*

Location

Loc Qty

Loc Code

ST300

6837

117441

16

117885

32

118451

5

118927

3

119017

5988

119075

793

*Handwritten: X7*

D3805-045

Manufactured

No

280

Each

2.0000

1

1

**\*D3805-045\***

Wearplate Assembly Aft, Low Gear

\*\*

*Handwritten: 1376789 6/12/12/10/11*

Location

Loc Qty

Loc Code

FP001

2

73817

1

74896

1

AN960JD10L

NAS1149D0332J

Purchased

No

280

Each

0.0000

2

2

**\*AN960JD10L\***

Washer

AN3-37A

Purchased

No

280

Each

1,546.000

7

7

**\*AN3-37A\***

Bolt

\*\*

*Handwritten: 12/01/31*

Location

Loc Qty

Loc Code

ST353

1546

117619

4

119086

1542

*Handwritten: X7*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December-23-11 10:36:10 AM

Page 8

Work Order ID: 77981

**\*77981\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 22/12/2011

Required Date: 01/02/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0363J

Purchased

No

280

Each

2,252.000

7

7

**\*NAS1149D0363.J\***

Washer

**\*\***

M1120142 (27) 11/12/11

Location

Loc Qty

Loc Code

ST298

2252

117601

61

118077

1

118612

18

118968

137

119537

2035

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



ITEM	Qty -041	Qty -043	Part Number	Description
1	X		D3804-041	SKIDTUBE ASSEMBLY, 206 A/B LOW
2		X	D3804-043	SKIDTUBE ASSEMBLY, 206 A/B HIGH
5	1	1	D2600-1-160	EXTRUSION
6	1	1	D2646	AFT CAP
7	1	1	D2647	CAP
8	19	20	D2649	CROSS BOLT SPACER
9	6	8	D2651-1	PLUG
10	6	8	D2651-3	O-RING
11		1	D2654-3	WEB
12	1		D2654-1	WEB
13	1	1	D2680-041	NUT PLATE
14	2	2	D3286-1	DOUBLER
15	2	2	D3286-3	STUD
21	2	2	AN960JD10L	WASHER
22	1	1	AN960JD416	WASHER
23	2	2	CCR264SS3-3	RIVET
24	2	2	CR3212-4-03	RIVET
25	52	52	CR3212-4-04	RIVET
26	2	2	MS27039-1-08	SCREW
27	1	1	MS27039-4-06	SCREW

#### NOTES

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: NONE
- 8) WEIGHT: 12.5 lb
- 9) WELD PER DART QSI 004
- 10) BENDING: DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 11) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 12) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO A  
WITH  
WORK ORDER

NO. 77981 M.L.J  
11/12/23

RELEASED  
09.03.03  
per ECN 09-536

A	NEW ISSUE	MB	08.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	99		
DRAWN	J		
CHECKED	0		
MFG. APPR.	B		
APPROVED	10		
DE APPR.	11		
DATE	08.07.07		

DART AEROSPACE USA, INC PORT HADLOCK, WA		REV. A
DRAWING NO.	D3804	SHEET 1 OF 5
TITLE	SKIDTUBE ASSEMBLY, 206A/B	SCALE
DATE 08.07.07		NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

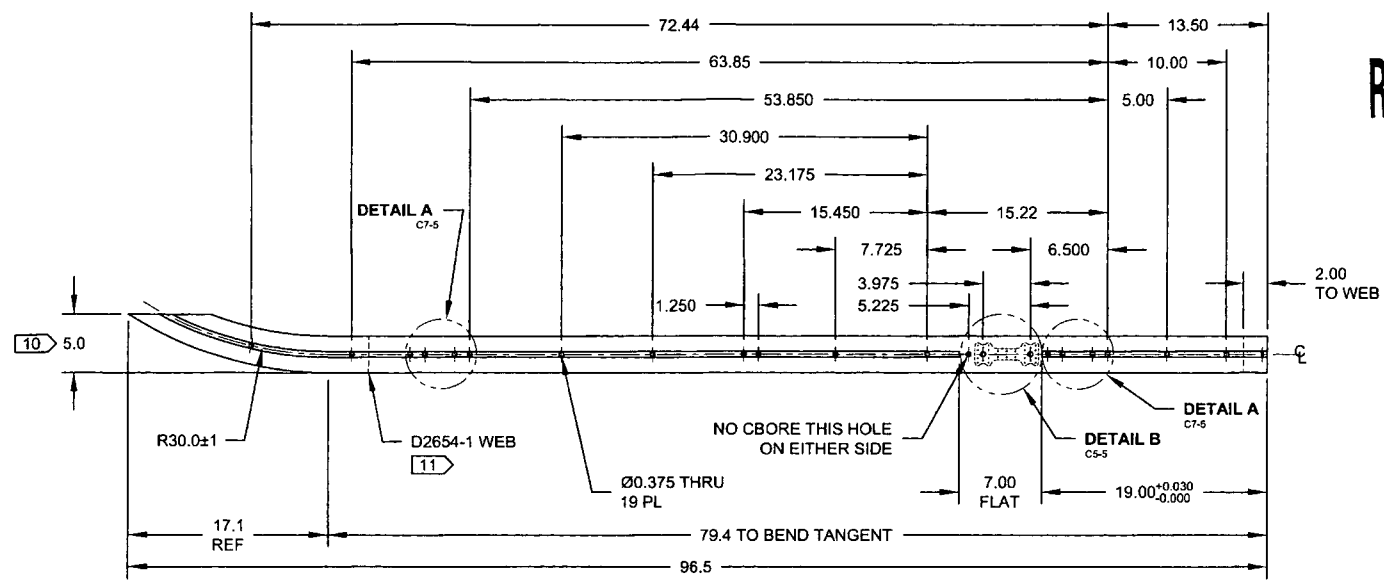
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

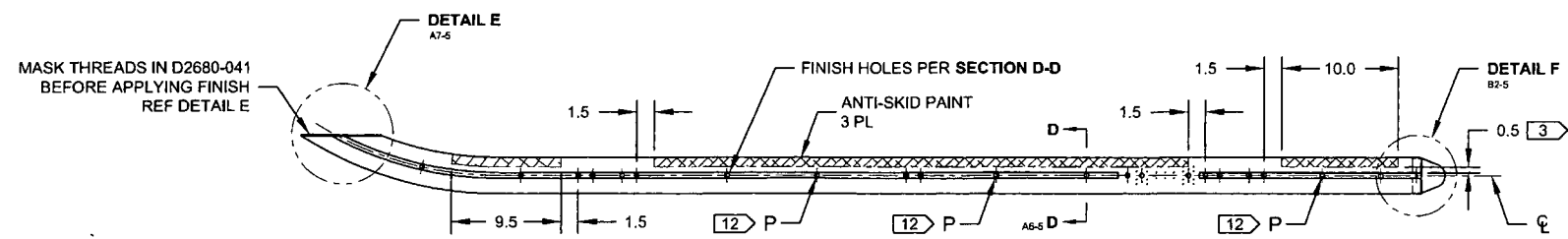
**NOTE:** Date & initial all entries

77981

RELEASED  
09.03.03



**D3804-041 BENDING/DRILLING DETAIL**



**D3804-041 ASSEMBLY/FINISHING DETAIL**

DESIGN	97	<b>DART AEROSPACE USA, INC</b>	
DRAWN	97	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D3804	SHEET 2 OF 5
APPROVED	97	TITLE	SCALE
DE APPR.	97	SKIDTUBE ASSEMBLY, 206A/B	NTS
DATE	08.07.07	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

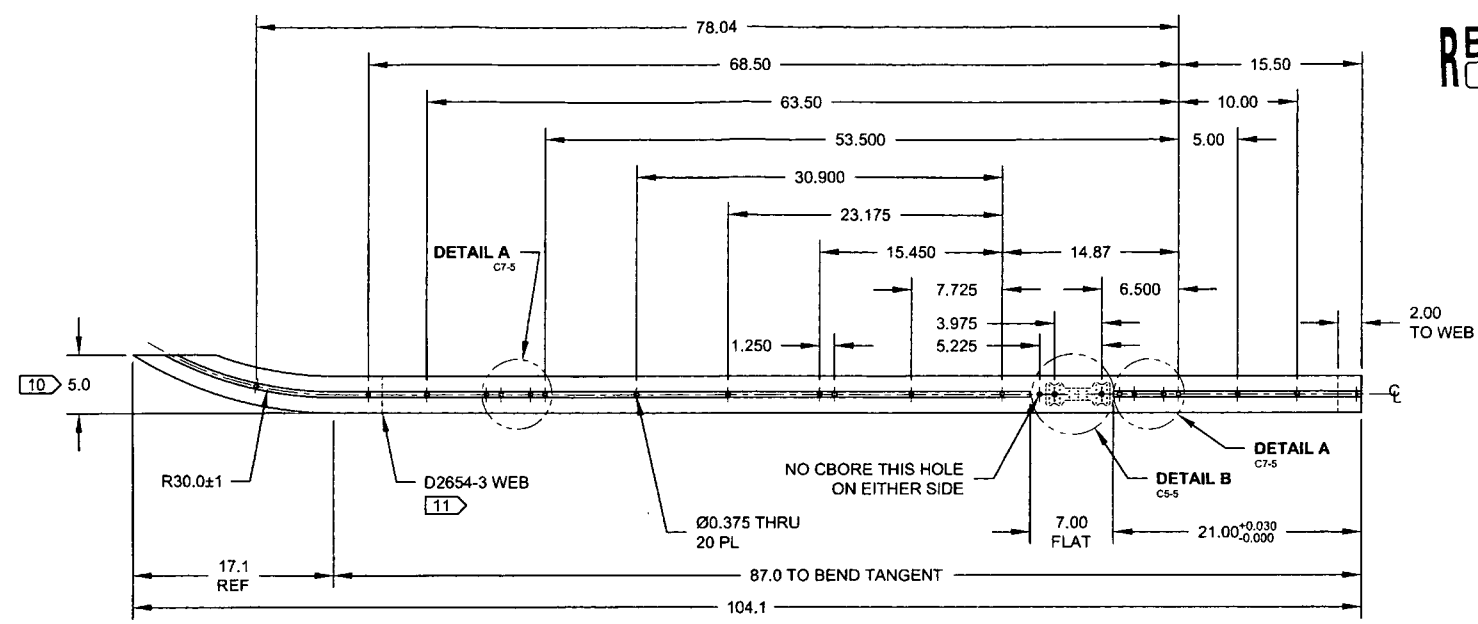
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

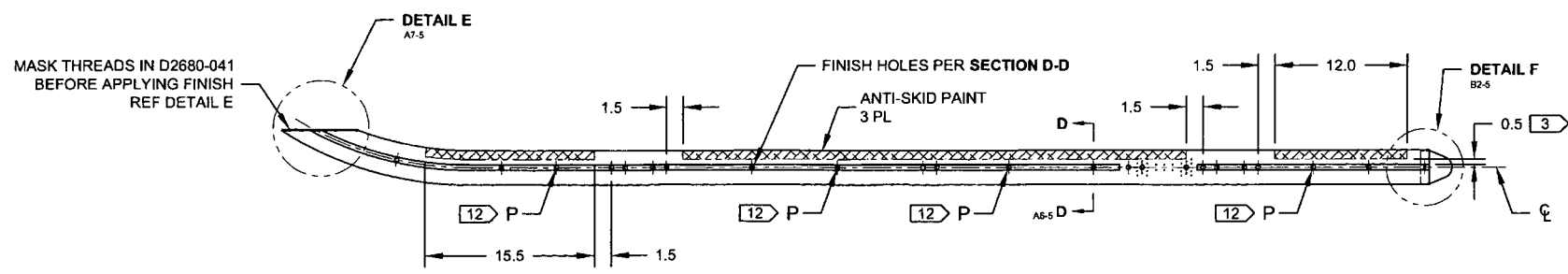
**NOTE:** Date & initial all entries

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RELEASED  
09.03.07



**D3804-043 BENDING/DRILLING DETAIL**



**D3804-043 ASSEMBLY/FINISHING DETAIL**

DESIGN	97	<b>DART AEROSPACE USA, INC</b>	
DRAWN	97	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D3804	SHEET 3 OF 5
APPROVED	97	TITLE	SCALE
DE APPR.	97	SKIDTUBE ASSEMBLY, 206A/B	NTS
DATE	08.07.07	<small>COPYRIGHT © 2008 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

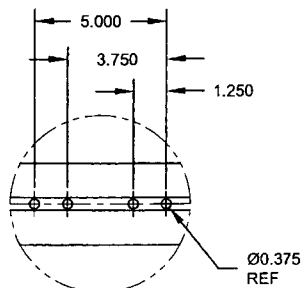
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

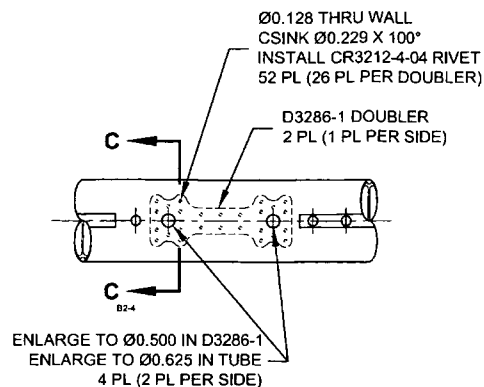
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

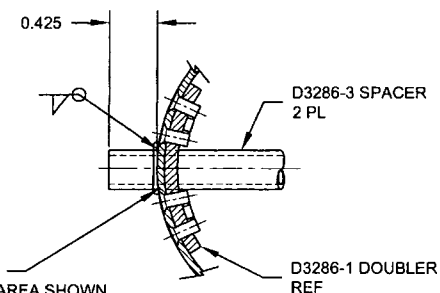
77981  
**RELEASED**  
09.03.03



**DETAIL A** D6-2  
SCALE NONE C2-2  
D6-3  
C2-3

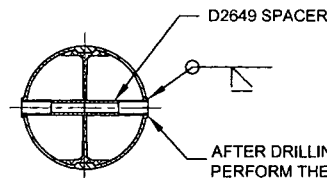


**DETAIL B** C3-2  
SCALE NONE C3-3



- TO INSTALL D3286-1/3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH OUTSIDE SURFACE OF ROUND TUBE
  2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
  3. ENLARGE HOLES IN D3286-1 TO Ø0.500
  4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.03 X 45°
  5. RIVET D3286-1 TO TUBE
  6. INSERT D3286-3 SPACER
  7. WELD IN PLACE AND GRIND FLUSH

**SECTION C-C** C6-4  
PARTIAL SECTION  
SCALE NONE



**SECTION D-D** A4-2  
FOR Ø0.375 HOLES ONLY A4-3  
SCALE NONE

- AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
1. CHAMFER HOLE 0.03 X 45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. CBORE TO Ø0.313 X 0.75 DP (EXCEPT WHERE INDICATED)

DESIGN	97	<b>DART AEROSPACE USA, INC</b>	
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MFG. APPR.	J	D3804	SHEET 4 OF 5
APPROVED	J	TITLE	SCALE
DE APPR.	J	SKIDTUBE ASSEMBLY, 206A/B	NTS
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W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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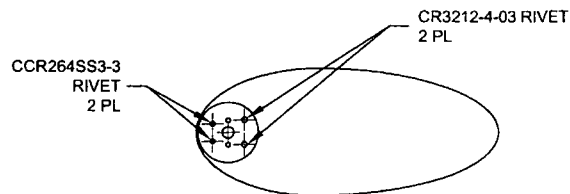
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

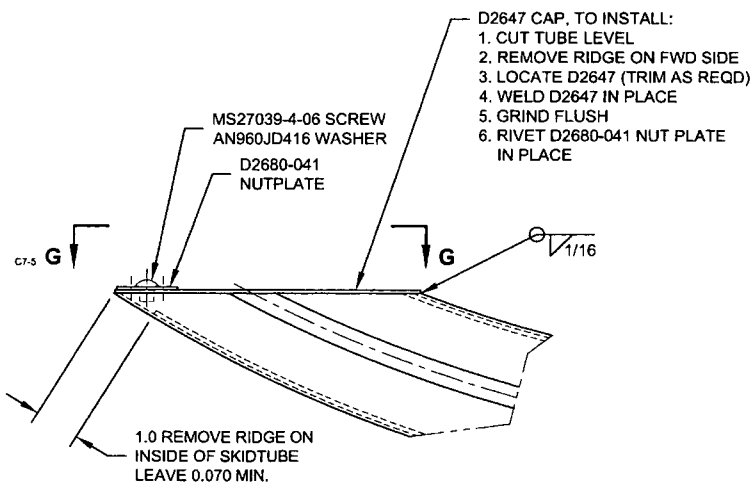


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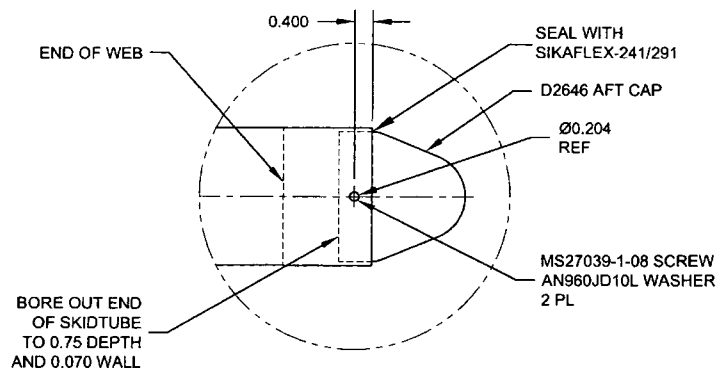
RELEASED  
09.03.07



**VIEW G-G**  
SCALE NONE



**DETAIL E**  
SCALE NONE



**DETAIL F**  
SCALE NONE

DESIGN	41	<b>DART AEROSPACE USA, INC</b>	
DRAWN	41	PORT HADLOCK, WA	
CHECKED	41	DRAWING NO.	REV. A
MFG. APPR.	41	D3804	SHEET 5 OF 5
APPROVED	41	TITLE	SCALE
DE APPR.	41	SKIDTUBE ASSEMBLY, 206A/B	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 281

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliot  
Job number: 77988  
Part number: A206-642-151  
Description: Skid plate  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminium  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[ ] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier David King Date of Test Coupon 12.01.23  
Welder Barclay Elliot Date of Test Coupon 12.01.23

The above named individual is qualified in accordance with AWS D17.1.2001 to weld